

# Receiver EKD 500

## 14 kHz to 30 MHz

- including internal micro-computer
- operating data memory for 100 receiving channels
- programmable control functions
- remote-controllable via series interface
- excellent signal path parameters





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## Application

The Receivers of the type series EKD 500 meet the multiple operating requirements of modern stationary and mobile radio equipment for the reception of the telephone and telegraph transmission modes within the frequency range 14 kHz to 30 MHz. A micro-computer is used for the operation rendering convenient direct setting or external control by means of a series interface. Thus, the Receiver is compatible with automatic radio networks.

The chosen equipment design meets the mechanical-environmental conditions for the application in vehicles and on ships.

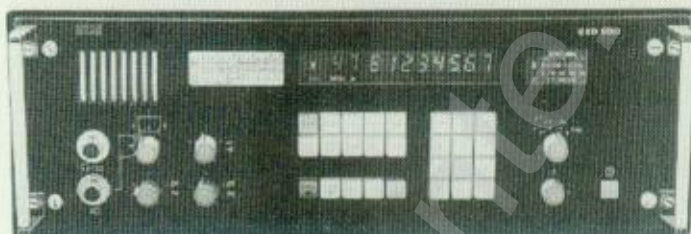
## SPECIAL FEATURES

### Receiving path

- High really usable sensitivity by means of
  - Receiver input circuit with low intermodulation distortions and large dynamic range
  - Spectral purity of the first conversion oscillator
  - Excellent selection due to preselector. (14 subranges), crystal filters for the 1st IF (70.2 MHz) and eight mechanical filters for the 2nd IF (200 kHz)
- Short setting times of the frequency preparation and the signal path
- Demodulator for F1B, with direct teleprinter connection
- Internal power supply which can be switched on for the direct connection of an active aerial

### Operation

- Programming of 99 channels and other operating parameters without interruption of reception
- Battery-aided CMOS data memory
- Easy access to two channels, e. g. emergency call frequencies
- Programmable SCAN-operation
  - Holding time: 0.5, 1, 2 ... 99 s
  - Mode: channel call-in or frequency response
  - Detection range: number and sequence of channels (for channel call-in) F min, F max and step size (for frequency response)
  - Stop also by external control signal



- External operation via V. 24/V.28 data interface (socket EXT)
  - Programmable bit rate 200 to 2400 bit/s
  - Programmable equipment-No. 0...99,
  - Selectable data output
  - One receiver (Master) or computer is able to control several subreceivers (Slave) which can be connected directly one after the other (via socket EXP).

TECHNICAL DATA

• Frequency range	14 kHz to 30 MHz
smallest decade frequency step	10 Hz
Frequency instability in the temperature range	$\leq 5 \cdot 10^{-7} / -10 \dots +50^{\circ}\text{C}$
• Modes of transmission which can be demodulated	A1A, A3E, J3E, R3E, B8E, B <sub>R</sub> 8E, F1B, F3C $Z_{in} = 75\text{ Ohm}$ , asymmetric emf for 10 dB signal-to-noise ratio A1A: $\leq 0,5\text{ }\mu\text{V}$ J3E: $\leq 1,5\text{ }\mu\text{V}$ A3E: $\leq 5\text{ }\mu\text{V}$ , $m = 0,5$ A1A: $\leq 3\text{ }\mu\text{V}$
• Receiver input	
• Sensitivity	
150 kHz to 30 MHz	
< 150 kHz	
• Noise immunity	
IF-suppression	$\geq 90\text{ dB}$
Image frequency suppression	$\geq 80\text{ dB}$
Blocking	$\leq 3\text{ dB}$ useful signal attenuation
(emf <sub>useful</sub> = 100 $\mu\text{V}$ emf <sub>interference</sub> = 2 V $\Delta f \geq 30\text{ kHz}$ )	
Intermodulation (d3) caused by interfering signals	$\geq 80\text{ dB}$
(emf <sub>interference 1</sub> = emf <sub>interference 2</sub> = 30 mV with $\Delta f \geq 20\text{ kHz}$ )	
• HF/IF gain control	manuel automatic combined
Regulating range (6 dB errors)	$\geq 120\text{ dB}$ (1 $\mu\text{V} \dots 1\text{ V}$ emf)
Control time, upwards	$\leq 5\text{ ms}$ (+40-dB level jump)
Control time, downwards	0.3 s or 4 s (-40-dB level jump)
• F1B demodulation	
Assigned frequency spacing	100 to 1000 Hz
Modulation rate	$\leq 100$ or $\leq 600\text{ Bd}$
Output signal	40 mA single current, $R_L \leq 200\text{ ohm}$ by conversion to 1.9 kHz
• F3C demodulation	
Output signal	1.9 kHz $\pm$ deviation, 0 dBm at 600 ohm by 10-digit seven-segment display
• Display of all controls	• F1 tuning
• Signal check by LED-line	• Receiving level
	• AF line level
• Signal outputs	
IF output	200 kHz/ $\geq 50\text{ mV}$
2 AF line outputs	0 dBm across 600 ohm
AF output	$\geq 0.5\text{ V}$ across 1 kohm
(for ancillary set EZ 111)	
Loudspeaker	
(optionally internal or external)	$\geq 0.5\text{ W}$ at 8 ohm, controllable and disconnectable
2 headphone terminals	$\geq 10\text{ mW}$ across 250 ohm, controllable
Recorder terminal	$\geq 140\text{ mV}$ across 200 kohm
Teleprinter terminal	40 mA/single current
• Control inputs/outputs	
Interface for external operation	• EXT
	• EXP
	• SCAN-STOP
	• Reception blocking

GENERAL DATA

• Power supply	
Mains operation	127 or 220 V/ $\pm 10\%$ , 45 ... 65 Hz, $\leq 55\text{ VA}$
Protection class	acc. to TGL 21366 (connection for the earthing conductor)
Battery operation	12 V or 24 V/ $\pm \frac{20}{10}\%$ , $\leq 40\text{ W}$ (Battery will not be earthed by receiver. In case of mains failure automatic switching to battery operation.)